

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-12. (canceled)

13. (new) Metering unit (1, 26) forming a block (2, 27) comprising a material feed duct (10, 34, 35), a metering cavity (4, 42, 43) which may communicate with the said material feed duct (10, 34, 35), a material outlet orifice (5, 44) placed on a wall of the said metering cavity (4, 42, 43), and a valve (3, 28, 29, 52) in the form of a cylindrical rod designed to slide through and close off the said material outlet orifice (5, 44), the said metering unit (1, 26) furthermore including a piston (7, 30) mounted so as to slide coaxially around the valve (3, 28, 29, 52) so as to allow the volume of the metering cavity (4, 42, 43) to be varied, characterized in that the side wall of the piston (7, 30) has a through-passage (8, 47) suitable for permitting material to be conveyed between the said material feed duct (10, 34, 35) and the inside of the piston (7, 30), the said valve being designed to momentarily close the said through-passage (8, 47).

14. (new) Metering unit according to Claim 13, characterized in that the lower wall of the piston (7, 30) has a conical bore (13), the base of the cone being located on the side adjacent to the metering cavity (4).

15. (new) Metering unit according to Claim 13, characterized in that the metering cavity (4, 43) includes a breaker plate (9, 32).

16. (new) Metering unit according to Claim 14, characterized in that the valve (3, 28, 29, 52) has a helical groove (12, 36), the said groove (12, 36) being dimensioned so as to contain and permit the flow of material.

17. (new) Metering unit according to Claim 16, characterized in that the valve (3, 28) has a groove of rounded cross section, composed of two successive portions, i.e. a straight part and then a helix (12, 36) of decreasing depth.

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18. (new) Metering unit according to Claim 13, characterized in that the piston (7, 30) has a helical groove (12, 39) placed on its external face.

19. (new) Metering unit according to Claim 18, intended for the manufacture of multilayer objects, the said unit comprising several material feed ducts (34, 35) and a corresponding number of passages (47) in the piston (30), the valve (28) and the piston (30) each having a groove (36, 39).

20. (new) Plastic metering system comprising a metering unit according to Claim 13 and an accumulator (15, 16) having a duct (17) placed so as to communicate with the material feed duct (10, 34, 35), the duct (17) of the accumulator (15, 16) having an extrusion screw (19).

21. (new) System according to Claim 20, comprising means for moving the extrusion screw (19) axially in the duct (17) of the accumulator (15, 16).

22. (new) System according to Claim 20, comprising a regulation piston (20) placed so as to move in a cylinder placed transversely with respect to the said duct (17) of the accumulator.

23. (new) Method using a metering unit as defined Claim 13, characterized in that the following steps are carried out in succession:

- the material outlet orifice (5, 44) is opened by lowering the valve (3, 28, 29, 52), which at the same time closes the through-passage (8, 47);
- the piston (7, 30) is lowered and a dose of plastic is extracted through the material outlet orifice (5, 44);
- the material outlet orifice (5, 44) is closed by raising the valve (3, 28, 29, 52) which simultaneously opens the through-passage (8, 47);
- the piston (7, 30) is returned to its initial position by the inflow of pressurized material in the through-passage (8, 47) and by the filling of the metering cavity (4, 42, 43).